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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,556	10/01/2003	Adam L. Cohen	P-US081-A-MG	9542
32107	7590	09/11/2006	EXAMINER	
MICROFABRICA INC. ATT: DENNIS R. SMALLEY 7911 HASKELL AVENUE VAN NUYS, CA 91406			BELL, BRUCE F	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/677,556

Applicant(s)

COHEN ET AL.

Examiner

Bruce F. Bell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-39 is/are rejected.
- 7) ☒ Claim(s) 20 and 40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____ | 6) ☐ Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 20 and 40 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 20 and 40 do not further limit the apparatus structure on which they depend. The recitation of the production of device based on operations does not further limit the apparatus features of the base claim.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14-16, 18, 32-36, 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 14-16, 18, 32-36 and 38 are vague and indefinite with respect to the alignment and/or retention structure being presented wherein the structure is conductive in some claims and not in others. Since the instant independent claim is directed to just an alignment and/or retention structure, and there is no mention of conductive materials and/or electrical connections in the independent claim, the examiner will impose a species election in the next office action, with respect

to the alignment and/or retention structure being conductive or non-conductive, since the search required is different for both structures. The examiner has examined this application the best that he could with respect to the invention being both, however, the examiner could not examine this application to the best of his abilities with the uncertainty of what applicants instant invention actually requires.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13, 17, 19, 21-31 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokoyama (US 6281445).

Yokoyama disclose a connection device for use in connection between two electronic components and a connection device provided on a first electronic component. The connection device includes two metal layers having mutually different coefficients of thermal expansion and a plurality of side wall pieces that are provided on the metal layers so as to form a connecting space for a second electronic component. See abstract. The connection between an electronic component and a board shows the shape of a flip-chip bump formed on an LSI chip or on a board is made so that one end has a depression, with the other end having a pillar shape that mates with a depression. The base part of the

depression shape is formed by a two layer metal structure in which the two layers have different coefficients of thermal expansion, with the upper layer being made of a metal with a large coefficient of thermal expansion and the lower layer being made of a metal with a small coefficient of thermal expansion, so that temperature control can be used to control connection between the two electronic components. See col. 3, lines 4-16. The connection device used in connection between two electronic components is provided on a first electronic component that comprises two metal layers having mutually different coefficients of thermal expansion and a plurality of side wall pieces that are provided on the metal layers so as to form a connecting space for a second electronic component. See col. 3, lines 58-65. A depression is formed in a metal connection part on the board side and a pillar shape is formed in a metal connection part on the LSI chip side so as to correspond to the depression. By forming these shapes, it is possible to have these shapes mate with each other when the LSI chip is connected to the board. The metal connection part on the board side that has the depression is formed by the base part and a side wall, the base part being formed by two metal layers. If heat is applied to a metal connection part with a depression, the metal connection part will attempt to expand in a direction that is parallel to the board. Using a metal connection part formed with a depression, a pillar shaped metal connection part of an LSI is joined to the metal connection part having the depression. The metal connection part with the

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depression returns to its original shape, thereby tightening onto the pillar shaped metal connection part so as to achieve an electrical joint. See col. 4, lines 25-68.

The prior art of Yokoyama anticipates the applicants instant invention as set forth by way of the disclosure to Yokoyama above with respect to the instant claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
September 5, 2006


Bruce F. Bell
Primary Examiner
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